



Confirmation No.: 3592

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicants: Wollenberg et al.

Examiner: M. Wallenhorst

Serial No.: 10/699,510

Group: Art Unit 1743

Filing Date: October 31, 2003

Docket: T-6298A (538-60)

For: HIGH THROUGHPUT PREPARATION
OF LUBRICATING OIL COMPOSITIONS
FOR COMBINATORIAL LIBRARIES

Dated: May 5, 2006

MAIL STOP APPEAL BRIEF-PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

TRANSMITTAL OF APPELLANTS' BRIEF

Sir:

Enclosed please find APPELLANTS' BRIEF.

Please charge Deposit Account No. 50-3591 to cover the appeal fee of \$500.00.

Also, please charge any deficiency as well as any other fee(s) which may become due under 37 C.F.R. § 1.17, or credit any overpayment of such fee(s) to Deposit Account No. 50-3591. Also, in the event any additional extensions of time are required, please treat this paper as a petition to extend the time as required and charge Deposit Account No. 50-3591. TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.

Respectfully requested.

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APPELLANTS' BRIEF

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APPELLANTS' BRIEF

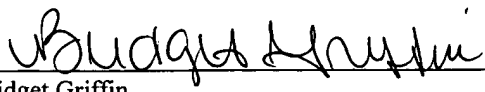
Sir:

In response to the final Office Action dated November 4, 2005 and the Advisory Action dated February 16, 2006, Applicants appeal pursuant to the Notice of Appeal filed on March 3, 2006 and received in the U.S. Patent and Trademark Office on March 6, 2006. Pursuant to 37 C.F.R. §41.37, one copy of this brief is submitted in connection with the appeal which has been taken herein.

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postpaid in an envelope, addressed to the: MAIL STOP APPEAL BRIEF-PATENTS Commissioner for Patents, Alexandria, VA 22313-1450 on May 5, 2006.

Dated: May 5, 2006


Bridget Griffin

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(1) **REAL PARTY IN INTEREST**

The real party in interest for this application is Chevron Oronite Company LLC.

(2) **RELATED APPEALS AND INTERFERENCES**

There are no other related appeals or interferences for this application.

(3) **STATUS OF CLAIMS**

Claims 1-37 are pending, stand rejected and are under appeal. All of these claims have been finally rejected and constitute the claims on appeal.

A copy of appealed Claims 1-37 as pending is presented in the Appendix.

(4) **STATUS OF AMENDMENTS**

Appellants' claims were finally rejected in a final Office Action mailed November 4, 2005. Appellants submitted an Amendment on February 3, 2006 in response to the final Office Action. An Advisory Action was mailed on February 16, 2006 in which the Amendment was entered by the Examiner but considered to not place the application in condition for allowance.

(5) **SUMMARY OF CLAIMED SUBJECT MATTER**

One invention of the appealed claims provides a high throughput method for preparing a plurality of different lubricant oil formulations (page 3, lines 13 and 14). The first step of the high throughput method provides a major amount of at least one base oil of

lubricating viscosity and a minor amount of at least one lubricating oil additive for combination to formulate a lubricating oil composition (page 5, line 8 through page 14, line 7). The second step of the high throughput method provides a plurality of test reservoirs (page 5, line 8 through page 14, line 7 and Figure 1). The third step of the high throughput method combines under program control, the major amount of the at least one base oil of lubricating viscosity and the minor amount of the at least one lubricating oil additive in varying percentage compositions to provide a plurality of different lubricating oil composition samples (page 5, lines 4-7; page 15, line 18 through page 20, line 14 and Figure 1). The fourth step of the high throughput method contains each of the different lubricating oil composition samples in the plurality of test reservoirs (page 15, line 18 through page 20, line 14 and Figures 1 and 2).

A second invention of the appealed claims also provides a high throughput system for preparing a plurality of lubricant oil formulations under program control (page 4, lines 1 and 2). The high throughput system comprises (a) a supply of at least one base oil of lubricating viscosity (page 5, line 8 through page 10, line 18); (b) a supply of at least one lubricating oil additive (page 10, line 19 through page 10, line 14, line 7); (c) a plurality of test reservoirs (page 5, line 8 through page 14, line 7 and Figure 1); (d) means for combining selected quantities of the at least one base oil of lubricating viscosity with selected quantities of the at least one lubricating oil additive to form a plurality of lubricating oil composition samples (page 5, lines 4-7; page 15, line 18 through page 20, line 14 and Figure 1); and, (e) means for dispensing each lubricating oil composition sample in a respective test reservoir (page 15, line 18 through page 20, line 14 and Figures 1 and 2).

The means for dispensing each lubricating oil composition sample in a respective test reservoir of a high throughput system of the present invention can include a mixing chamber and a nozzle extending from the mixing chamber, with the nozzle terminating in an outlet opening through which the lubricant oil composition samples are ejected (page 19, line 20 through page 20, line 7 and Figures 1 and 2). The high throughput system of the present invention can further include a means to pressurize the mixing chamber to eject the lubricating oil composition samples (page 20, lines 8-14).

(6) GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection presented in this appeal are the following:

(1) Claims 1-35 stand rejected under 35 U.S.C. §103(a) as being obvious over Kolosov et al. U.S. Publication No. 2004/0123650 ("Kolosov et al.").

(2) Claims 36-37 stand rejected under 35 U.S.C. §103(a) as being obvious over Kolosov et al. in view of Shtein et al. U.S. Publication No. 2005/0087131 ("Shtein et al.").

(3) Claims 1 and 13-14 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over copending U.S. Application No. 10/699,529.

(7) GROUPING OF CLAIMS

The claims on appeal, i.e., Claims 1-37, are grouped as follows:

(1) Claims 1-22;

(2) Claims 23-35; and

(3) Claims 36 and 37.

(8) **ARGUMENT**

A. Kolosov et al. Fail to Establish the *Prima Facie*
Obviousness of the Method and System of Appealed Claims 1-35

1. The Examiner's Position

In the Final Office Action, the Examiner applied the reference as follows:

Kolosov et al. fail to teach that the combinatorial chemistry method and apparatus for testing of commercial products can be used for the testing of a plurality of samples containing a base oil of lubricating viscosity and a lubricating oil additive in varying percentages. However, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the method and apparatus taught by Kolosov et al. for such a purpose since Kolosov et al. teach that the combinatorial chemistry method and apparatus is applicable to the testing of any commercial flowable product such as lubricants, and also teach that the products tested may include additives such as detergents, etc. therein.

* * *

... [i]t is noted that the reference to Kolosov et al. teaches of the general analysis of a large number of diverse compounds and that the compounds analyzed can be lubricants having an additive therein. See paragraph nos. 0042-0043 in Kolosov et al. It is inherent that in a lubricating oil composition having an additive therein that the base lubricant oil is present in a major amount while the additive is present in a lesser minor amount. In the system taught by Kolosov et al., different lubricant compositions having additives therein are contained within test receptacles in an array or combinatorial library. Kolosov et al. teach of the automatic dispensing of a flowable material and an additive into a plurality of test reservoirs, and teach of a robotic system for moving the plurality of test reservoirs relative to a dispensing means or moving the dispensing means relative to the test reservoirs. Although a large number of different types of flowable samples are taught by Kolosov et al. as being analyzed in a high throughput manner in a combinatorial library by measuring many different parameters, the fact remains that the disclosure of Kolosov et al. does teach of the analysis of lubricant compositions having additives therein in a high throughput manner by placing many different types of the lubricant compositions in a plurality of receptacles, automatically moving the receptacles to locations for measurement of parameters and measuring many different parameters of the samples including those associated with the long-term stability of the compositions. Therefore, the reference to Kolosov et al. discloses all of

the limitations of the instant claims with the exception of a multiplicity of lubricating oil compositions having an additive therein in different percentages.

2. The Appellants Position

Before showing how the Examiner's rejection of the appealed claims fails to make out a *prima facie* case of obviousness, a statement of the legal principles relating to the establishment of *prima facie* obviousness would be worthwhile. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992) succinctly sets forth the principles as follows:

The *prima facie* case is a procedural tool of patent examination, allocating the burdens of going forward as between examiner and applicant. *In re Spada*, 911 F.2d 705, 707 n.3, 15 USPQ2d 1655, 1657 n.3 (Fed. Cir. 1990). The term "*prima facie* case" refers only to the initial examination step. *In re Piasecki*, 745 F.2d 1468, 1572, 223 USPQ 785, 788 (Fed. Cir. 1984); *In re Rinehart*, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). As discussed in *In re Piasecki*, the examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability. If that burden is met, the burden of coming forward with evidence or argument shifts to the applicant.

After evidence or argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument. *See In re Spada, supra*; *In re Corkill*, 771 F.2d 1496, 1500, 226 USPQ 1005, 1008 (Fed. Cir. 1985); *In re Caveny*, 761 F.2d 671, 674, 226 USPQ 1, 3 (Fed. Cir. 1985); *In re Johnson*, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984).

If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent. *See In re Grabiak*, 769 F.2d 729, 733, 226 USPQ 870, 873 (Fed. Cir. 1985); *In re Rinehart, supra*.

Oetiker and the cited precedents are clear on this: if it can be shown that the Examiner has failed to make out a *prima facie* case of obviousness, the final rejection herein must be reversed.

The U.S. Patent and Trademark Office guidelines for *prima facie* obviousness are set forth in MPEP 2142 (Legal Concept of *Prima Facie* Obviousness) as follows:

...First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

These three criteria are not satisfied by Kolosov et al. or, for that matter, any of the combination of references cited by the Examiner for at least the following reasons.

As acknowledged by the Examiner in the final Office Action, nowhere does Kolosov et al. disclose or suggest a method for preparing a plurality of different lubricant oil formulations comprising (a) providing a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive for combination to formulate a lubricating oil composition; (b) providing a plurality of test reservoirs; (c) combining, under program control, the major amount of the base oil of lubricating viscosity and lubricating oil additive in varying percentage compositions to provide a plurality of different lubricating oil composition samples; and, (d) containing each of the different lubricating oil composition samples in the plurality of test reservoirs, as presently recited in appealed Claim 1. Nor, as also acknowledged by the Examiner, does Kolosov disclose or suggest a system for preparing a plurality of lubricant oil formulations, under program control, which comprises (a) a supply of at

least one base oil of lubricating viscosity; (b) a supply of at least one lubricating oil additive; (c) a plurality of test reservoirs; (d) means for combining selected quantities of the at least one base oil of lubricating viscosity with selected quantities of the at least one lubricating oil additive to form a plurality of lubricating oil composition samples; and, (e) means for dispensing each lubricating oil composition sample in a respective test reservoir, as presently recited in appealed Claim 23.

According to the Examiner, the Kolosov et al. reference discloses all of the limitations of the instant claims with the exception of a multiplicity of lubricating oil compositions having an additive therein in different percentages. Thus, it is the Examiner's apparent belief that one of ordinary skill in the art would have found it obvious to prepare a plurality of lubricant oil compositions containing different percentages of an additive therein in the plurality of test reservoirs taught by Kolosov et al., since Kolosov et al. teach that the flowable material to be screened in the combinatorial library can be a lubricant oil having an additive therein, and further that it is inherent that in a lubricant composition having an additive therein that the base lubricant oil is present in a major amount while the additive is present in a lesser minor amount.

Contrary to the Examiner's assertion that it is inherent that in a lubricant composition having an additive therein that the base lubricant oil is present in a major amount while the additive is present in a lesser minor amount, it is well established that the concept of inherency has no place in determinations of obviousness under section 103, as opposed to anticipation under section 102, because, as stated in *Jones v. Hardy*, 727 F.2d 1524, 1529, 220 USPQ 1021, 1025 (Fed. Cir. 1984), "it confuses anticipation by inherency, i.e., lack of novelty,

with obviousness, which, though anticipation is the epitome of obviousness, are separate and distinct concepts." See also *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ 769, 775-76 (Fed. Cir. 1983). As is the case here, the Examiner refuses to acknowledge that lubricating oil compositions do not have to contain a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive. In point of fact, a lubricating oil composition can be a concentrate that contains a major amount of a lubricating oil composition and a minor amount of base oil of lubricating viscosity as a diluent for the concentrate. The Examiner also refuses to acknowledge that a lubricant can be a grease, jelly, e.g., K-Y jelly or petroleum jelly, as well as powders, e.g., dry graphite, PTFE, etc., formulated with water and can be used as is such that all lubricants may not even require an additive. Thus, this wholly unsupported assertion cannot possibly provide a basis for this rejection. Accordingly, the Examiner's position is untenable and in contrast to Federal Circuit precedent.

Kolosov et al. merely disclose a system and method for screening a library of a multitude of genera of material samples for rheological properties. Exemplary material disclosed in Kolosov et al. are commercial products, which may be tested or may include ingredients that may be tested according to the present invention and include pharmaceuticals, coatings, cosmetics, adhesives, inks, foods, crop agents, detergents, protective agents, lubricants and the like. Kolosov et al. further disclose that the invention has particular utility in connection with the screening of a number of different material forms including, for example, gels, oils, solvents, greases, creams, foams and other whipped materials, ointments, pastes, powders, films, particles, bulk materials, dispersions, suspensions, emulsions or the like.

Accordingly, Kolosov et al. provides no teaching or suggestion that a lubricant

can be a base oil of lubricating viscosity for use in a lubricating oil composition together with a lubricating oil additive, much less that the base oil of lubricating viscosity is present in a major amount and the lubricating oil additive is present in a minor amount. Certainly, then, there is no appreciation in Kolosov et al. of a method and/or system for rapidly preparing a plurality of sample candidate lubricating oil compositions containing a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive such that a high throughput preparation and subsequent screening of a vast number of diverse compositions can be achieved to identify leading lubricating oil compositions.

Thus, nothing in Kolosov et al. would lead one skilled in the art to modify the system and method for testing the genera of flowable material disclosed therein and arrive at the presently recited method for preparing a plurality of different lubricant oil formulations comprising (a) providing a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive for combination to formulate a lubricating oil composition; (b) providing a plurality of test reservoirs; (c) combining, under program control, the major amount of the base oil of lubricating viscosity and lubricating oil additive in varying percentage compositions to provide a plurality of different lubricating oil composition samples; and, (d) containing each of the different lubricating oil composition samples in the plurality of test reservoirs, as recited in appealed Claim 1. Also, nothing in Kolosov et al. would lead one skilled in the art to modify the system and method for testing the genera of flowable material disclosed therein and arrive at the presently recited system for preparing a plurality of lubricant oil formulations, under program control, which comprises (a) a supply of at least one base oil of lubricating viscosity; (b) a supply of at least one lubricating oil additive; (c) a plurality

of test reservoirs; (d) means for combining selected quantities of the at least one base oil of lubricating viscosity with selected quantities of the at least one lubricating oil additive to form a plurality of lubricating oil composition samples; and, (e) means for dispensing each lubricating oil composition sample in a respective test reservoir, as recited in appealed Claim 23. Instead the Examiner has used hindsight in reconstructing the claimed compositions.

Additionally, nothing in Kolosov et al. teaches or suggests the limitations of dependent Claims 2-22 and 24-35.

Accordingly, one skilled in the art reading the Kolosov et al. disclosure would not be motivated to modify the method and system therein and arrive at the presently claimed invention, as set forth in the presently appealed claims. Thus, no prima facie case of obviousness has been made by the Examiner and the rejection of appealed Claims 1-35 should be withdrawn.

B. The Combined References of Kolosov et al. and Shtein et al. Fail to Establish the *Prima Facie* Obviousness of the System of Appealed Claims 36 and 37

The deficiencies of Kolosov et al. discussed above with respect to the previous rejection of Claim 23, from which Claims 36 and 37 ultimately depend, apply with equal force to this rejection. Additionally, as acknowledged by the Examiner, Kolosov et al. fail to disclose that the dispensing means for dispensing the samples to be analyzed onto the substrates includes a mixing chamber connected to a nozzle.

Shtein et al. do not cure the above-noted deficiencies of Kolosov et al.

Specifically, nowhere does Shtein et al. disclose or suggest a system for preparing a plurality of lubricant oil formulations, under program control, which comprises (a) a supply of at least one base oil of lubricating viscosity; (b) a supply of at least one lubricating oil additive; (c) a plurality of test reservoirs; (d) means for combining selected quantities of the at least one base oil of lubricating viscosity with selected quantities of the at least one lubricating oil additive to form a plurality of lubricating oil composition samples; and, (e) means for dispensing each lubricating oil composition sample in a respective test reservoir, as presently recited in Claim 23.

Rather, Shtein et al. simply disclose depositing an organic material onto a semiconductor device. Shtein et al. further disclose that the organic material is deposited onto the semiconductor device by way of a carrier gas. At no point is there any suggestion, motivation or even a hint in Shtein et al. of depositing a liquid much less a lubricating oil composition. Thus, even by combining Shtein et al. with Kolosov et al., one skilled in the art would not even arrive at the system as recited in appealed Claims 36 and 37. In fact, one skilled in the art would be led away from the disclosure of Shtein et al. As such, the Examiner has utterly failed to establish the motivation to combine Kolosov et al. and Shtein et al. and arrive at Appellants claimed invention.

Since Kolosov et al., alone or in combination with Shtein et al., do not disclose or suggest the system for preparing a plurality of lubricant oil formulations, under program control, as recited in Claims 36 and 37, Claims 36 and 37 are nonobvious over Kolosov et al. and Shtein et al. and the rejection should be withdrawn.

- C. The Provisional Rejection of Claims 1, 13 and 14 Under
the Judicially Created Doctrine of Obviousness-type Double
Patenting over copending U.S. Application No. 10/699,529

Upon resolution of all outstanding issues remaining in this application, Appellants will submit a Terminal Disclaimer to obviate the provisional rejection.

D. CONCLUSION

For the foregoing reasons and for all of the reasons of record, it is submitted that appealed Claims 1-37 are patentable over the prior art relied upon by the Examiner. Reversal of the final rejections by the Board is therefore believed to be warranted, such being respectfully requested.

Respectfully submitted,

A handwritten signature in black ink that reads "Michael E. Carmen". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

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(9) **CLAIMS APPENDIX**

1. A method for preparing a plurality of different lubricant oil formulations comprising:
a) providing a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive for combination to formulate a lubricating oil composition;

b) providing a plurality of test reservoirs;

c) combining, under program control, the major amount of the at least one base oil of lubricating viscosity and the minor amount of the at least one lubricating oil additive in varying percentage compositions to provide a plurality of different lubricating oil composition samples;
and,

d) containing each of the different lubricating oil composition samples in the plurality of test reservoirs.

2. The method of claim 1, wherein the test reservoirs comprise recesses in a unitary body.

3. The method of claim 1, wherein the test reservoirs comprise individual receptacles.

4. The method of claim 1, wherein the combining step (c) is performed within each respective test reservoir.

5. The method of claim 1, wherein the combining step (c) is performed outside of the test reservoirs.

6. The method of claim 1, wherein the combining step (c) comprises metering predetermined respective amounts of the base oil of lubricating viscosity and the lubricating oil additive, the metering being automatically controlled by a computer controller.

7. The method of claim 1, wherein the combining step (c) includes mixing of the base oil of lubricating viscosity and the lubricating oil additive.

8. The method of claim 7, wherein the mixing is accomplished by static mixing.

9. The method of claim 7, wherein the mixing is accomplished by agitation.

10. The method of claim 9, wherein the agitation comprises mechanical stirring.

11. The method of claim 9, wherein the agitation comprises ultrasonic agitation.

12. The method of claim 1, further comprising the step of heating the base oil of lubricating viscosity or lubricating oil additive or both.

13. The method of claim 1, wherein the base oil of lubricating viscosity is a natural or synthetic oil.

14. The method of claim 1, wherein the lubricating oil additive is selected from the group consisting of antioxidants, anti-wear agents, detergents, rust inhibitors, dehazing agents, demulsifying agents, metal deactivating agents, friction modifiers, pour point depressants, antifoaming agents, co-solvents, package compatibilisers, corrosion-inhibitors, ashless dispersants, dyes, extreme pressure agents and mixtures thereof.

15. The method of claim 1, wherein the plurality of lubricating oil compositions includes at least five samples.

16. The method of claim 1, wherein the plurality of lubricating oil compositions includes at least 100 samples.

17. The method of claim 1, wherein each of the lubricating oil composition samples has a volume of no more than about 20 ml.

18. The method of claim 1, wherein each of the lubricating oil composition samples has a volume of no more than about 15 ml.

19. The method of claim 1, wherein each of the lubricating oil composition samples has a volume of no more than about 10 ml.

20. The method of claim 1, wherein each of the lubricating oil composition samples has a volume of no more than about 5 ml.

21. The method of claim 1, further comprising analyzing the plurality of lubricating oil compositions.

22. The method of claim 1, further comprising storing information regarding the identity of the lubricating oil compositions in the plurality of combinations of lubricating oil compositions in a database.

23. A system for preparing a plurality of lubricant oil formulations, under program control, which comprises:

- a) a supply of at least one base oil of lubricating viscosity;
- b) a supply of at least one lubricating oil additive;
- c) a plurality of test reservoirs;
- d) means for combining selected quantities of the at least one base oil of lubricating viscosity with selected quantities of the at least one lubricating oil additive to form a plurality of lubricating oil composition samples; and,
- e) means for dispensing each lubricating oil composition sample in a respective test

reservoir.

24. The system of claim 23, wherein the base oil of lubricating viscosity is a natural or synthetic oil.

25. The system of claim 23, wherein the lubricating oil additive is selected from the group consisting of antioxidants, anti-wear agents, detergents, rust inhibitors, dehazing agents, demulsifying agents, metal deactivating agents, friction modifiers, pour point depressants, antifoaming agents, co-solvents, package compatibilisers, corrosion-inhibitors, ashless dispersants, dyes, extreme pressure agents and mixtures thereof.

26. The system of claim 23, wherein the test reservoirs comprise recesses in a unitary body.

27. The system of claim 23, wherein the test reservoirs comprise a plurality of individual receptacles.

28. The system of claim 23, further comprising a computer controller for automatically controlling said means for combining and means for dispensing.

29. The system of claim 23, wherein said means for dispensing and said plurality of test reservoirs are movable relative to each other.

30. The system of claim 23, further comprising a computer controlled metering apparatus for metering selected quantities of the base oil and additive for combining to provide the lubricating oil composition samples.

31. The system of claim 23, wherein the means for combining comprises a mixer.

32. The system of claim 31, wherein the mixer is a baffle-containing static mixer.

33. The system of claim 31, wherein the mixer is a mechanical stirrer.

34. The system of claim 31, wherein the mixer is an ultrasonic mixer.

35. The system of claim 23, further comprising a heater.

36. The system of claim 23, wherein the means for dispensing includes a mixing chamber and a nozzle extending from the mixing chamber, the nozzle terminating in an outlet opening through which the lubricant oil composition samples are rejected.

37. The system of claim 36, further including means to pressurize the mixing chamber to eject the lubricating oil composition samples.